

WHAT IS CLAIMED IS:

1. A method for controlling the drive energy of an ink jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head to a printing medium for performing printing, the method comprising:

a first step for supplying a plurality of different drive energies successively to said ink jet print head;

a second step for monitoring temperature of each of said ink jet print head according to the supply of said drive energy;

a third step for judging a threshold drive energy required for ink ejection of said ink jet print head using a value for said supplied drive energy and a value for said monitored temperature;

a fourth step for determining a drive condition for ejecting ink on the basis of said threshold drive energy; and

a fifth step for driving said print element on the basis of said determined drive condition.

2. A method for controlling the drive energy of an ink jet print apparatus according to claim 1, wherein in said first step, a difference of the amount of the drive energy supplied to said ink jet print head is generated by changing a pulse width of a drive pulse signal applied to said print element.

3. A method for controlling the drive energy of an ink jet print apparatus according to claim 1, wherein in said first step, an initial drive energy supplied is determined  
5 on the basis of drive condition information stored in said ink jet print head.

4. A method for controlling the drive energy of an ink jet print apparatus according to claim 1, wherein in said  
10 fifth step, said determined drive condition is compared with drive condition information stored in said ink jet print head, and when both are different, drive energy to drive said print element is changed.

15 5. A method for controlling the drive energy of an ink jet print apparatus according to claim 1, wherein in said fifth step, when said determined drive condition is different from drive condition information stored in said ink jet print head, drive condition information stored in  
20 said ink jet print head is updated with the determined drive condition data.

6. A method for controlling the drive energy of an ink  
25 jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head to a printing medium for performing printing, the method comprising:

a first step for supplying a plurality of different drive energies successively to said ink jet print head;

a second step for monitoring temperature of each of said ink jet print head according to the supply of said drive energy;

a third step for determining a drive condition for ejecting ink using a value for said supplied drive energy and a value for said monitored temperature; and

a fourth step for driving said print element on the basis of said determined drive condition.

7. An ink jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head for performing printing, the ink jet print apparatus comprising:

first means for supplying a plurality of different drive energies successively to said ink jet print head;

second means for monitoring temperature of each of said ink jet print head according to supply of said drive energy;

third means for judging a threshold drive energy required for ejection of said ink jet print head using a value for said supplied drive energy and a value for said monitored temperature;

fourth means for determining a drive condition for ejecting ink on the basis of said threshold drive energy; and

fifth means for changing drive energy applied to the print element of said ink jet print head on the basis of said determined drive condition.

5 8. An ink jet print apparatus according to claim 7, wherein a change of drive energy supplied to said ink jet print head is performed by is performed by changing a pulse width of a drive pulse signal applied to said print element.

10 9. An ink jet print apparatus according to claim 7, wherein an initial drive energy supplied by said first means is determined on the basis of drive condition information stored in said ink jet print head.

15 10. An ink jet print apparatus according to claim 7, wherein said fifth means compares said determined drive condition with drive condition information stored in said ink jet print head, and when both are different, changes drive energy to drive said print element.

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11. An ink jet print apparatus according to claim 7, wherein said fifth means, when said determined optimum drive condition is different from drive condition information stored in said ink jet print head, updates  
25 drive condition information stored in said ink jet print head with determined drive condition data.

12. An ink jet print apparatus wherein a print element is driven to eject an ink from an ink jet print head for performing printing, the ink jet print apparatus comprising:

5 first means for supplying a plurality of different drive energies successively to said ink jet print head;

second means for monitoring temperature of each of said ink jet print head according to supply of said drive energy;

10 third means for determining a drive condition for ejecting ink using a value for said supplied drive energy and a value for said monitored temperature; and

fourth means for changing drive energy applied to the print element of said ink jet print head on the basis of  
15 said determined drive condition.

13. An ink jet print apparatus wherein a memory for storing drive condition data is provided on an ink jet print head, by driving a print element an ink is ejected from said ink  
20 jet print head to a printing medium for performing printing, the ink jet print apparatus comprising:

first means for supplying a plurality of different drive energies successively to said ink jet print head;

25 second means for monitoring temperature of each of said ink jet print head according to supply of said drive energy;

third means for judging a threshold drive energy required for ink ejection of said ink jet print head using a value for said supplied drive energy and a value for said monitored temperature;

5 fourth means for determining a drive condition for ejecting ink on the basis of said threshold drive energy; and

fifth means for comparing said determined drive condition with drive condition information stored in said  
10 ink jet print head and, when both are different, updating drive energy information stored in said memory of said ink jet print head with said determined drive condition data.

14. An ink jet print apparatus according to claim 13,  
15 wherein said memory provided on said ink jet print head is an EEPROM.